Airport Ground Resource Planning Tool, Phase II

Completed Technology Project (2006 - 2008)

Project Introduction

This effort undertakes the creation of an Airport Ground Resource Planning (AGRP) tool. Little or no automation is currently available to support airport ground resource allocation decisions. The AGRP tool provides visualization both of the resource assignments as well as other information relevant to making resource assignment decision. In addition, AGRP automates or advises resource assignments, improving efficiency while reducing workload. In Phase 2, we propose to continue development of the AGRP tool through four work areas. First, we will complete the map and Resource Allocation displays. We will also complete the algorithm to automate resource allocation decisions and integrate it with the displays. The resulting AGRP prototype will be evaluated operationally. We will also extend the Phase 1 work to develop a block out time predictor, which would have tremendous application and benefit in other traffic management systems. In Phase 1, we proposed an architecture in which applications such as AGRP can subscribe to receive SMS data via a standardized interface. In Phase 2 we will complete the specifications for and implementation of this interface, which will replace the existing SMS client-server communication.

Anticipated Benefits

Potential NASA Commercial Applications: The AGRP tool consists of the displays, methods for manual entry, and algorithms for automated advisories to help manage airport ground resources. Non-NASA applications include use of AGRP outcomes by the FAA, air carriers, airport authorities, and airport ground service providers. The principal FAA application of the AGRP work will be to adopt the re-designed interface between the SMS server and SMS client as a standard. In doing so, the FAA will facilitate receiving air carrier information which benefit the FAA's goal of providing safe and efficient traffic flow. Several air carriers currently use information from the Surface Management System (SMS) to improve the efficiency of their ground operations without any automation explicitly designed for this purpose. The AGRP tool directly addresses this need. Airport authorities or ground service providers may also use AGRP where they are responsible for managing particular ground resources.

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Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Center / Facility:

Ames Research Center (ARC)

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

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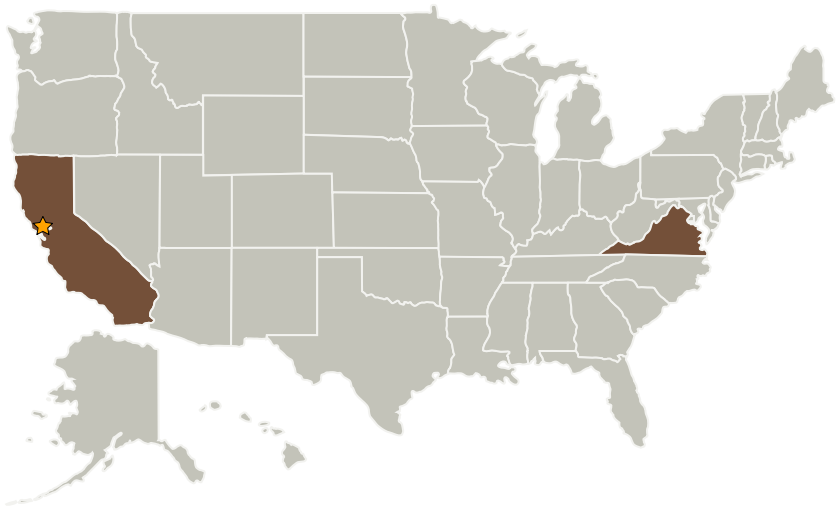
Primary U.S. Work Locations and Key Partners



Organizations Performing Work	Role	Type	Location
★Ames Research Center(ARC)	Lead Organization	NASA Center	Moffett Field, California
Mosaic ATM, Inc.	Supporting Organization	Industry	Leesburg, Virginia

Primary U.S. Work Locations	
California	Virginia

Project Management

Program Director:

Jason L Kessler

Program Manager:

Carlos Torrez

Principal Investigator:

Steve Atkins

Technology Areas

Primary:

- TX16 Air Traffic Management and Range Tracking Systems
  - TX16.3 Traffic Management Concepts